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Small Forest Ownership *in the* Urban Fringe Area of Michigan

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FOREWORD

The farm woodlot-urban fringe area of southern Lower Michigan is the subject of Station Paper No. 103 by Dr. Con Schallau. It is unique in that heretofore investigations of small private forest landownerships have been confined to the Nation's more heavily forested, less densely populated regions.

This report summarizes the findings of the latest study of small forest landownership conducted by the Lake States Station. In 1959 the Station published Station Paper No. 77 entitled, "Influence of Ownership on Forestry in Small Woodlands in Central Wisconsin," by Dr. Charles Sutherland and Carl H. Tubbs. In February 1962, Station Paper No. 95 entitled, "Small Private Forest Landowners in Michigan's Upper Peninsula," by Dr. Dean N. Quinney was released. These studies portray the general socio-economic characteristics, interest and participation in public forestry assistance programs, and the timber product marketing activity of small forest owners in selected areas of the Lake States.

M. B. DICKERMAN, Director

Cover Picture: Aerial photograph captures the dynamic pattern of land use in southern Michigan. Here, urban build-up, agricultural production, and forest cover vie for a place in the area's ever-changing economy. (Photograph courtesy of Agricultural Stabilization and Conservation Service.)

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Private Forest Landownership in the Urban Fringe Area of Michigan

by
Con H Schallau[1]

INTRODUCTION

The pattern of private forest landownership has been identified as a "forestry problem" for many years. For instance, in the Forest Service's first comprehensive forest resource analysis, the Capper Report, prepared over 40 years ago, large ownership was singled out as a basic forestry problem because of concern over possible monopolistic holdings (U. S. Forest Service 1920).[2] Today, however, the concern regarding private forest landownership represents a 180-degree shift in direction.

The official title of the Capper Report, "Timber Depletion, Lumber Prices, Lumber Exports, and Concentration of Timber Ownership," immediately suggests the contrast. It is paradoxical that in a relatively short span of years foresters have been concerned with both too much and too little concentration of ownership. Today's ownership problem centers upon the conclusion that the small woodland owners, who account for 60 percent of the Nation's commercial forest land, must shoulder a sizable share of the responsibility in providing for the Nation's future timber needs (U. S. Forest Service 1958, p. 103). To do this the 4.5 million small woodland owners would have to increase considerably their present level of production.

To a great extent, the "large ownership problem" resolved itself. Many of the early large owners either lost or liquidated their holdings. In more recent years, large ownerships employing good forestry measures have become accepted as an aid rather than a handicap to forestry. One might hope that the small private ownership problem would also resolve itself favorably without extensive forestry assistance programs. However, there is no adequate basis for such a presumption.

As in the past, public and private assistance programs will probably play a vital role in promoting better forestry practices by the small owner. But it is becoming increasingly apparent that forestry assistance programs will have to assume a higher degree of selectivity in the future than at present. As one authority has pointed out, there is good reason to believe that many small woodland owners are behaving in an economically more rational manner than their advisers have proposed (Clawson 1957). For some ownerships social and institutional as well as the economic environment limit the interest and participation in intensive forestry measures. Therefore, expenditures to promote their acceptance of such measures might well be unprofitable.

For greater efficiency, criteria must be developed that will direct assistance funds to those owners whose potential for increasing the Nation's timber output is the greatest. Development of such criteria will require information about the small forest landowners — who they are, how they react to suggestions, why some practice forestry and some don't. The study reported here was made to get such background information about the private landowner in the Midwestern farm woodlot areas. Since the study area encompasses several metropolitan areas, it also offered an opportunity to examine certain aspects of urban growth that affect forest resources.

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[1] *Research Forester, Lake States Forest Experiment Station. The Station is maintained at St. Paul 1, Minn., by the U. S. Forest Service in cooperation with the University of Minnesota. The author wishes to thank the persons who assisted in the planning and conduct of this study. He is especially grateful for the help given by Dr. Lee M. James of Michigan State University.*

[2] *See Literature Citations at the end of this report.*

Study Area

The study area includes the southernmost 37 counties of the Lower Peninsula of Michigan (fig. 1). Once almost entirely wooded, the area is now only 17 percent forested (Findell et al, 1960). Except for the northern tier of counties, which were once a part of the great Michigan pinery, the study area has never experienced an organized attempt to harvest the timber. The pioneers were intent with clearing the forest cover to establish farmsteads, and logging was strictly incidental.

These 37 counties account for most of the State's economic activity. They have 91 percent of the State's people (Beegle and Thaden 1960, p. 3), support about 75 percent of the total number of farms, and provide 91 percent of the urban employment.

Despite its urban character, southern Michigan cannot be ignored as a timber-producing area. Of the northern half of the Lower Peninsula 70 percent is forested in contrast to 17 percent in the southern half, but the latter area contains nearly twice as much sawtimber acreage — 986,000 acres compared with 501,000 acres (Findell et al, 1960, p. 38). The value of timber per unit of volume is much higher in the study area than farther north (fig. 2). Thus, although the volume of wood cut

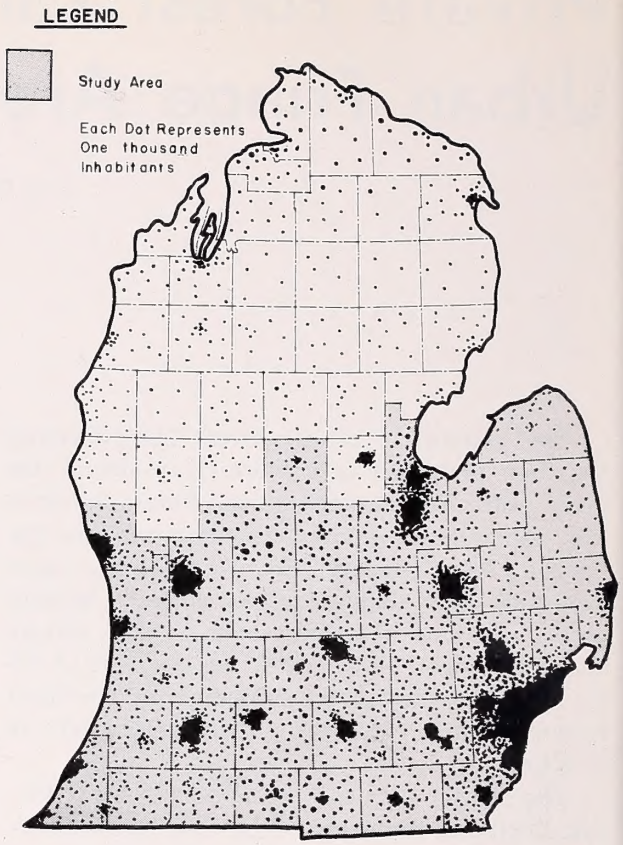

FIGURE 1. — Location of southern Michigan study area.

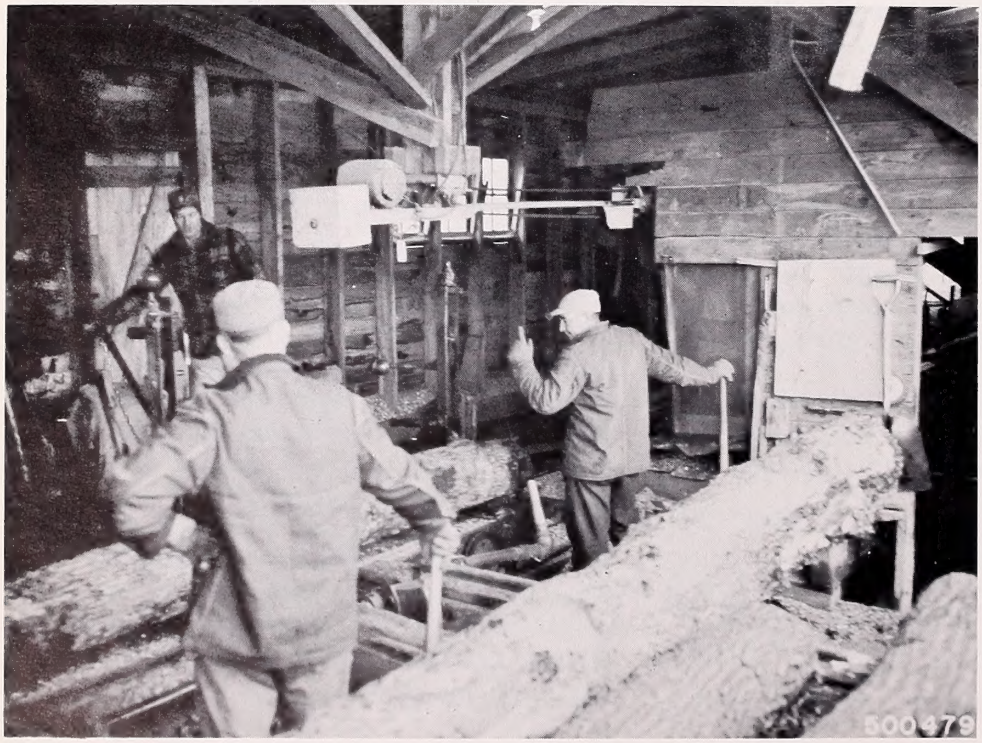

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FIGURE 2. — Sawmills process most of the timber harvested in southern Michigan. The majority of the sawmills, like the one pictured here, produce less than a million board feet annually.

each year from the forests of the northern half of the Lower Peninsula has been nearly twice that from southern Michigan's forests, the dollar value has been nearly the same — between 9 and 10 million dollars.[3]

Sampling Procedure

A six-section block located in each of 81 randomly selected civil townships was used as the basic sampling unit. Township supervisors furnished names, addresses, occupations, and forest acreage for the woodland owners. A total of 1,959 owners was recorded. These names were used for estimating the total woodland owner population and forest acreages by occupation class. From this sample, 250 were randomly chosen for interview purposes; 207 owners were actually contacted. After the interview the respondent's woodland was cruised and, if he had harvested timber between 1954 and 1959, his cutting practices were rated.

[3] *Source: Basic work tables, Michigan Survey Report, Fall, 1957, (unpublished). On file at the Lake States Forest Experiment Station.*

GENERAL CHARACTERISTICS OF FOREST LAND OWNERSHIPS

Numerous Woodland Owners With a Diversity of Occupational Backgrounds

Somewhat more than 127,000 woodland owners reside in the 37-county study area. From the standpoint of assistance programs, the diversity of the woodland owners' occupations further complicates the problems created by numbers alone.

The distribution of forest area and owners by the owners' occupation is shown below.

Occupation	Forest owners (percent)	Forest area (percent)
Full-time farming	25	24
Part-time farming[1]	14	11
Businessman-professional	16	20
Wage earner	19	16
Retired	16	15
Other[2]	10	14
Total	100	100

[1] A farmer who worked 100 or more days off the farm was designated as a part-time farmer. If he worked more than three-fourths of the time off the farm he was classified into a nonfarmer category.

[2] Includes sawmill operator, nonforest industry, housewife or widow, recreation group, real estate dealer, and undivided estate.

While some groups were not very important numerically no one group accounted for more than one quarter of the ownerships or the area of forest land. For example, the largest group, the full-time farmer, accounted for one-fourth of the ownerships and 24 percent of the forest area. Next in terms of numbers was the wage earner group with 19 percent.

Small Forest Acreages Supporting Low-Value Growing Stock

Only 12 percent of the forest owners in southern Michigan possess more than 50 acres of woodland. Nearly two-thirds of the forest area is divided among landowners having less than 25 acres of forest. But area of forest land owned turned out to be only a fair indicator of an owner's investment in growing stock. Whereas the businessman-professional group ranked second to the "other" class in terms of the average size of forest area owned, it was first in terms of the average growing stock value per owner (table 1). Part-time farmers, last in terms of woodland area per owner, ranked ahead of wage earners in growing stock value per owner.

Using an array of the owners' woodland holdings, ranked from the most valuable ownership to the least, the relationships between the number of owners, area of forest land, and value of growing stock were shown to be unbalanced. Only 9 percent of the owners accounted for one-half of the dollar value of southern Michigan's merchantable growing stock (fig. 3). Ninety percent of the value of the merchantable growing stock was accounted for by 35 percent of the owners with 45 percent of the forest area. Because of the long time required to produce a merchantable timber crop, accompanied by relatively short "managerial life cyles," present economic incentives to practice

TABLE 1. — *Forest area and forest value, by owner's occupation*

Occupation	Average area per owner		Growing stock value		Average Growing stock value per owner	
	Acres	Rank	Percent	Rank	Dollars	Rank
Full-time farming	22	3	29	1	1,777	4
Part-time farming	18	6	7	5	803	5
Businessman-professional	28	2	26	2	2,336	1
Wage earner	19	5	5	6	423	6
Retired	21	4	19	3	1,831	3
Other	31	1	14	4	2,079	2
Total	23		100		1,524	

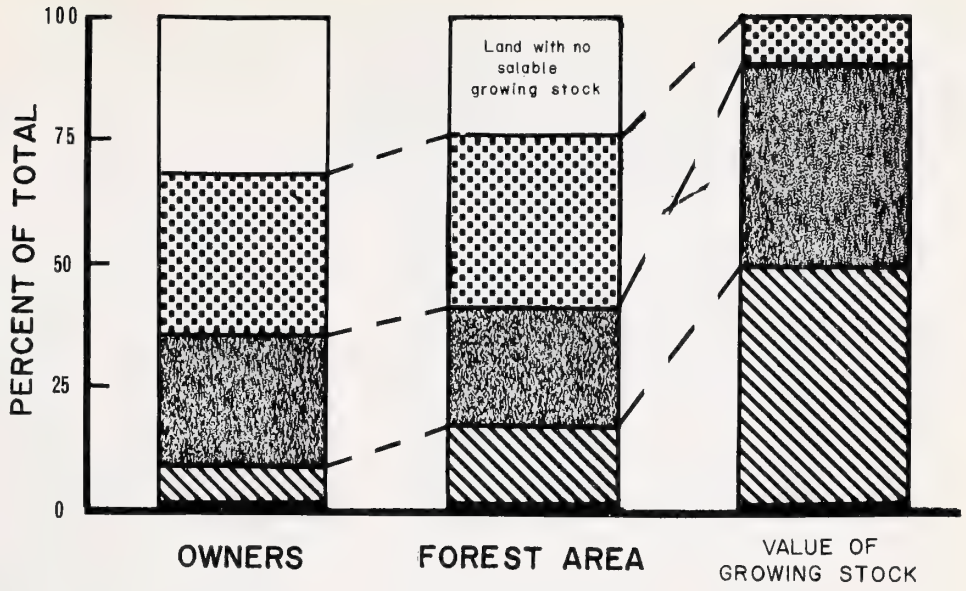

FIGURE 3. — Distribution of forest owners, forest area, and growing stock value.

forestry are apparently quite limited for the majority of the woodland owners in the study area.

Limited Planning Horizons

Because of the length of time needed to grow salable timber, the owner's age, length of tenure, family ties, and tenure arrangements are very important. In southern Michigan the average woodland owner was 40 years old when he acquired full ownership of his wooded tract and, by assuming that he planned to dispose of it at age 65, the longest he would formulate plans and expectations for the future would be 25 years. This might not be too restrictive for the individual owner who already had a producing woodland enterprise, but for the new owner of nonstocked woodland the situation would be quite different. The time required for such forest land to produce monetary returns would exceed the average owner's term of management.

Rapid turnover would not be a serious matter if the shift in property ownership did not reverse an established precedent for promoting timber growth. Since the transfer of forest property is generally a nonfamily exchange, chances are slight that the new owner's plans would coincide with those of the former owner. Almost two-thirds of the ownerships were not in the present owner's immediate family prior to his acquisition.

THE FOREST LANDOWNER AS A TIMBER PRODUCER

Incomes From Forest Property Are Infrequent

As a group the woodland ownerships of southern Michigan have made a significant contribution to the State's timber harvest. However, the average individual owner's contribution was trivial. For instance, in 1954 the value of the raw products produced from southern Michigan forest land was 9.1 million dollars, but the average owner harvesting timber during this period received only $950 for the stumpage sold. This might at first appear to be a respectable sum, but most owners sell timber products only once (if at all) during their tenure. On an annual basis, the average return to individual owners is very small.

Concepts of Forest Management Are Mediocre

Woodland owners were subjectively classed into one of five categories depending on their concept of forest management: No concept, below median, median concept, above median, and high concept.[4] Because timber production plays such a minor role in the economy of the study area, it was not too surprising to find that most of the owners ranked at the lower end (median or below) of this scale. Eighty-two percent of the owners had below median or no concepts while only seven percent of the owners were classed as having above median or high concepts (fig. 4).

Size of ownership did not vary with the owner's concept of forest management, but value of grow-

[4] *Owners who did not associate their wooded holdings with timber products were classified into the "no concept" category. "Below median" concept owners had a very elementary grasp of forest management. To them, all it involved was tree planting and fire protection. Owners who recognized that forest management required some effort above and beyond labor and capital inputs used in fire protection and reforestation were given a "median" concept rating. "Above median" concept meant that the respondent recognized the act of tree harvesting as a silvicultural tool and had a fair to good awareness of timber products marketing techniques. "High concept" owners had a sustained yield concept which nearly approached or equaled that of professional foresters.*

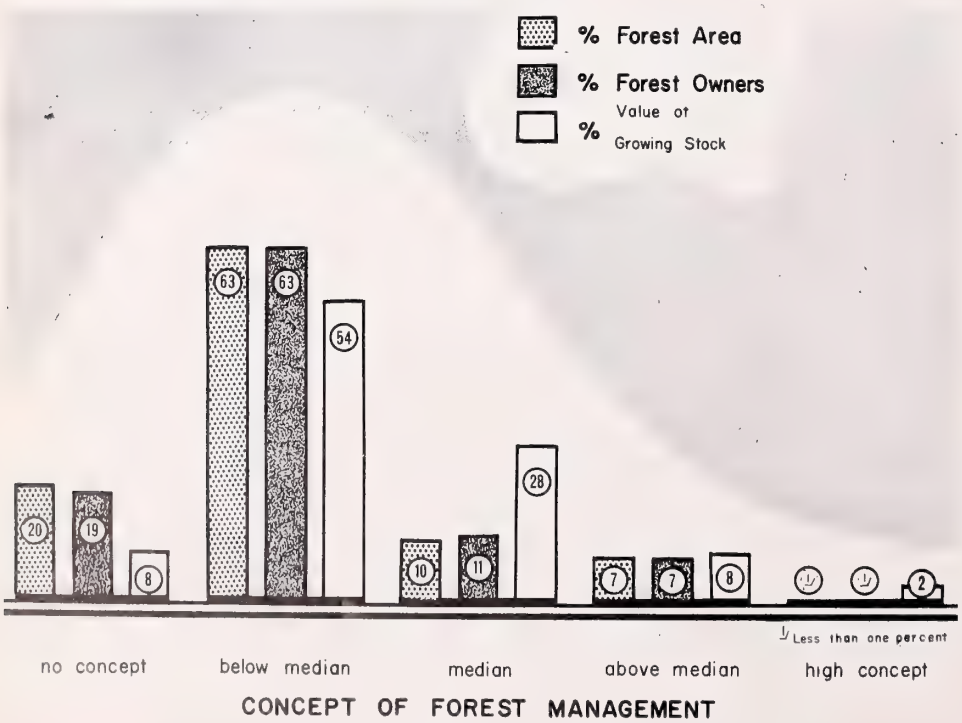

FIGURE 4. — Number of private forest owners, area, and growing stock, by concept of forest management. In this context "median" refers to the concept classes and not the distribution of individuals within these groups. Such usage differs from the "statistical" definition.

ing stock did. Generally speaking the better the owner's concept, the more valuable his woodland investment would be. Present value reflects logging history, and the more enlightened owner generally practiced better cutting.

An owner's concept of forest management was found to vary depending on his occupation, age, and family ties. Owners classified into either the full-time farming or the businessman-professional groups expressed, on the average, a higher degree of enlightenment than members of the other occupational categories. Owners younger than 40 and above 60 years of age had the poorest concepts of forest management. The 51 to 60 age bracket ranked the highest. The data yielded no explanation of this apparent similarity between the two extreme age groups. Farm management researchers, however, have also observed various similarities between the youngest and oldest managers (Heady et al. 1953).

Owners whose woodlands had been in their immediate family for two or more generations were somewhat more enlightened, on the average, than the rest of the owners. Although this relationship lends some support to the belief that family ties promote better land stewardship, the proportion of ownerships falling into the "two or more generation" category was so small that any ameliorating effects would be unimportant to the study area as a whole.

Although the majority of the owners had only an elementary grasp of forest management, 52 percent indicated forest products to be the main objective for retaining their woodland as shown in the following tabulation.

Objective	Forest owner (percent)
Forest products[1]	52
Pasture	11
Clear for agriculture	5
Recreation	4
Investment-speculation	3
Inactive	19
Residence	2
Other	4
Total	100

[1] Includes growing timber for sale and home use, fuel and maple syrup production, and for timber liquidation.

Only 5 percent of the owners expressed a desire to eventually clear their woodland for agricultural purposes. The acreage of grazed woodlots is on the decline in the study area (fig. 5).

FIGURE 5. — Formerly this sawtimber stand was heavily grazed and as a result now supports little reproduction. However, grazed woodlots are not as prevalent in southern Michigan as in the past. During the last 10 years the acreage has decreased by nearly a half a million acres. This reflects a concomitant reduction of 30 percent in the number of dairy cows on southern Michigan farms during this period.

Cutting Practices Tend To Be Poor

Nearly one-third of the owners interviewed had harvested timber during their tenure. An appraisal was made of all the woodlots logged over between 1954 and 1959 in order to rate the productivity of recently cutover forest land. Three out of five owners whose woodlots were appraised qualified for a fair or good rating.[5] However, only 18 percent fell into the latter category. Since 41 percent of the owners cut in a poor manner it is unlikely that the increase in productivity from the good cutting will be enough to compensate for the degenerating effects of the poor cutting activity (fig. 6).

The poor cutting performances assume more significance when the rapid rate of forest property turnover is considered. It was estimated that in the next 10 years 40 percent of the forest ownerships would change hands and that 40 percent of the new owners who do harvest timber would cut in a poor manner. Also, an undeterminable number of the old owners would probably "mine" their woodlands before disposing of their property.

Certain personal characteristics were associated with the manner in which an owner harvested his

[5] *"Good" cutting meant that as a result of the logging activity the owner's woodland property will improve in quality and volume productivity within the first 10 years after harvest. "Fair" meant that the stand will only maintain its pre-cutting productivity during the next 10 years, while "poor" described instances where the stand's productivity was reduced by logging.*

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FIGURE 6. — What was once a well-stocked northern hardwood stand is now a desolation of brush, stumps, and cull trees. Poor cutting is more prevalent in the study area than good cutting.

forest land. Here again a similarity between the oldest and the youngest owners was observed: the poorest cutting records were made by the younger owners (40 and under) followed closely by those 61 years of age and up. The 51- to 60-year-old group showed the best record.

Cutting practices varied considerably depending upon the owner's occupation. For example, almost half of the businessman-professional owners who harvested timber between 1954 and 1959 qualified for a good cutting rating. One-third of the "other" owners qualified as good, while all of the wage earners' land was cut in a poor manner.

Restrictions on logging operators were not generally designed to insure good cutting. Of the owners who harvested timber 41 percent allowed the logging operator to take any tree he desired. Actually, 34 percent of the owners intended that everything merchantable be removed by the logger. Although some of the cutting practices of the owners showing no intention to restrict the logger were judged to be fair, none was given a good classification.

It is significant that 59 percent of the owners restricted the logger's cutting activity. Although the cutting practices of such owners were considerably better than those not restricting the logger, poor cutting often occurred when a diameter or species limitation was used. Only good or fair cutting practices resulted if the owner had trees marked for cutting.

Woodland Owners Are Unfamiliar With Timber Marketing Procedures

An owner's decision to cut in a poor manner may have been economically rational or may have been the result of lack of knowledge or other factors. It is doubtful, however, whether many of the owners adequately protected their interests in negotiating the sale of timber products. As one service forester put it, most woodland owners will travel from one end of a county to the other to save themselves $100 when buying a car or a piece of machinery, but won't hesitate to sell stumpage to the first timber buyer who comes along. As a result they may sell for several hundred dollars less than they could have received. Results of this study lend support to this generalization.

Findings of this investigation give no proof of whether or not the owners who sold timber products received a fair price, but on the other hand there is evidence that many of them were unable to determine the fairness of negotiated prices. In fact, as shown below, 55 percent of the interviewees who sold timber products admitted that they had no basis for determining the reasonableness of the prices received.

Means for determining reasonableness	Forest owners (percent)
Advice of neighbor or friend	8
Advice of service forester	8
Comparison of different buyers' quotations	11
Personal knowledge with source unknown	18
No real basis	55
Total	100

Of the owners who sold stumpage 42 percent were paid in a lump sum. There is nothing particularly wrong with this method of payment as long as the owner knows how much timber he is selling and has received several bids. It is doubtful that many owners selling by lump sum knew how much volume they were selling; and the fact that only 9 percent of all timber sellers received more than one bid further indicates their poor bargaining position.

Only 36 percent of the owners used a written contract in the sale of their timber products. Though such owners as a group generally exhibited better cutting practices than the other owners, the fact that poor cutting frequently resulted in spite of the contract indicates that often this document contained covenants that protected only the buyer's position.

Woodland Improvement Activity Is Negligible

Most of the timber products derived from southern Michigan's forest resources grew in spite of, rather than because of, the owners' efforts. Only 5 percent of the woodland owners interviewed had carried out any woodland improvement. Most of this was confined to timber stand improvement endeavors. The frequency of tree planting, although this is an act of regeneration rather than improvement, did indicate an interest on the part of some of the owners in creating woodland-type values. One-fifth of the owners stated that they had planted trees. However, except for the businessman-professional owners — the average-sized forest plantation established by this group was 31 acres — most of the planting efforts were inconsequential. Then too, only 13 percent of all owners who planted trees indicated timber production to be their main reason for planting. Creation of aesthetic values was the most frequent reason given (34 percent of those who planted trees).

Despite the lack of woodland improvement activity, the majority (76 percent) indicated that they *could* improve their forest management. Forty-one percent of these owners indicated a lack of interest in forestry as their main reason for not improving their woodland management, while 31 percent said they had more rewarding activities claiming their time and effort.

IMPACT OF URBANIZATION

Proximity to large population centers is one factor that distinguishes southern Michigan's forests and makes them different from other regions where forest ownership studies have been made. Nearly all of Michigan's population growth during the last decade occurred in the study area. At the same time, the larger cities like Detroit were actually losing residents. It is the fringe area which is accounting for most of the population growth. This extensive character of southern Michigan's population growth has and probably will continue to have an effect on the forest resources in the study area.

For instance, urbanization appeared to influence woodland owners' objectives. Except for those owning forest land in the urban fringe zones, the majority of the interviewees gave forest products as their objective of forest landownership (table 2). In the urban fringe the most common response was "inactive," which claimed 42 percent of the owners. This suggests that forest land is being idled before it is actually subdivided or developed for industrial, recreational, or other purposes. "Speculation" was an objective restricted almost entirely to urban fringe owners.

TABLE 2. — *Forest owner's objectives, by population density zone*
(Percent of forest owners)

Objective	Persons per square mile			
	10-30	31-50	51-100	100+ (urban fringe)
Forest products	63	50	70	29
Pasture	12	6	19	12
Clear for agriculture	10	3	7	0
Investment-speculation	0	1	0	13
Inactive	6	24	4	42
Other	9	16	0	4
Total	100	100	100	100

Logging activity was less frequent in the urban fringe than elsewhere. Only 19 percent of these owners had harvested timber. In contrast, at least a third of the owners in the other three zones had harvested timber products during their tenure. This suggests that the owners' stated objectives have some meaning since, as noted above, forest products was a less important objective than "inactive" in the urban fringe.

All of the interviewees residing in the urban fringe who harvested timber during the 1954-1959

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FIGURE 7. — Until recently this shaded lawn was a part of a managed woodlot.

period did so in a poor manner. In the remaining zones the majority of the owners qualified for fair or better ratings. It would require additional research to prove the point, but this relationship suggests that many of the urban fringe woodland owners expect the eventual usurping of their woodlands by urban uses and that when they get an opportunity to sell stumpage they harvest everything merchantable.

Owners were asked if they had ever sold a portion of their woodland for urban-type development and, if not, whether they had ever received offers from prospective buyers. Five percent had sold portions of their woodland and an additional 16 percent had received offers. As expected, there was more evidence of urban encroachment in the urban fringe. The important observation is that some owners in each of the other zones had either sold wooded property for urban development or had been approached for sale of woodland for such purposes (fig. 7).

The rate at which private forest land in southern Michigan will shift annually to nonforest uses in the next decade can be estimated at approximately 1.0 percent. This rate is based on an agricultural economist's prediction of the rate at which agricultural land in southern Michigan will be urbanized.[6] Although there is no necessary relationship between the rate at which agricultural land and forest land shift to urban uses, the differences may not be very important. For one thing the pattern of urbanization may serve to isolate certain sectors of the study area from timber product markets. Then, despite the existence of merchantable timber volume, these stranded pockets of forest land might cease to be effective suppliers of timber products.

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[6] *Clarence W. Jensen. The effects of urbanization on agricultural land use in Lower Michigan. Unpublished Ph.D. thesis, Mich. State Univ. 1958. See p. 155. Jensen estimated that if population growth and economic activity are maintained, future urban expansion in southern Michigan can be expected to result in approximately 135,000 acres of agricultural land per year going into urban and rural nonfarm land.*

INTEREST IN FORESTRY ASSISTANCE PROGRAMS

Only A Minority Of Owners Have Participated

Woodland owners were queried as to their interest and participation in various public assistance programs and other devices being used or suggested to enhance private forest management in southern Michigan. Most showed little or no interest in the assistance programs. Likewise most of them had had no contact with such programs in the past. When a general description of an assistance program was given, expected participation varied depending upon the program, the owner's occupation, size of forest holding, and investment in growing stock.

Numerous owners indicated having contact with the county cooperative extension service director's office. Of the owners, 35 percent had received some form of nonforestry advice from this source; 3 percent had contacted him for advice on forestry.

The extension forester at Michigan State University also provides direct aid to woodland owners. However, only 2 percent of the interviewees sought forestry advice from this source. Most owners were not familiar with the extension forestry program and, when asked whether or not they were interested, only 1 percent of the woodland owners expressed strong interest.[7] An additional 11 percent showed slight interest.

One out of ten woodland owners interviewed had a Soil Conservation District farm plan, but this rate varied among occupations. Woodland owners classified as either full-time farmers or businessman-professional were more likely to have asked for such assistance than other types of owners. Only a minority of these planners had adopted forestry practices subsequent to having their farm plan developed. Twenty-five percent did retire some cropland or grassland by planting trees.

Although two-thirds of the woodland owners were familiar with the Agricultural Conservation Program (ACP) in general and 30 percent had received some nonforestry cost-share aid, only 4 percent had requested ACP forestry assistance. Most of this ACP forestry aid was for tree planting.

After having it explained to them, another 11 percent of the owners showed some interest in the forestry phase of ACP. Both the participating and interested owners had more valuable investments in growing stock, on the average, than the noninterested group.

Only three occupational groups — full-time farming, businessman-professional, and retired — participated in the forestry phase of ACP, but some individuals in all groups expressed a degree of interest. In fact, the wage-earner group was second only to the "retired" category in terms of interest shown.

Eighteen per cent of the owners indicated that they were aware of but had not sought ACP forestry aid. Various reasons were given: Most frequently (one-third) felt that the trouble of applying for cost-share outweighed any possible benefits. One-fifth expressed a lack of interest in forestry as their reason for not applying for ACP forestry cost-share. Sixteen percent were opposed to the subsidy-like nature of ACP.

Although not primarily a forestry assistance program, the now defunct Conservation Reserve did promote some forestry practices. Records indicate that slightly more than 4,000 acres of trees were planted on retired acreages in southern Michigan during the 4 years the Conservation Reserve was in effect, but none of the woodland owners interviewed had contracted to plant trees. The 35 percent of the interviewed owners who knew about the tree planting aspect of the Soil Bank were asked why they hadn't participated. The most frequent answer given (32 percent of the owners responding) was that they felt their land to be

[7] *The terms "slight" and "strong" were used to classify an owner's interest in the various assistance programs. Individuals expressing a strong interest were those who, at the time of the interview, had a felt need for the service or advice in question, and indicated they would take it upon themselves to obtain such aid in the near future. Individuals expressing slight interest saw no need at the time of the interview for the particular advice or assistance, but indicated that if an occasion would arise which required such knowledge or information they would seek help. There is a strong likelihood that such owners will soon forget that assistance is available.*

too valuable to retire. Another 18 percent expressed opposition to the Conservation Reserve as a matter of principle.

The 65 percent of the owners who did not know about the tree-planting aspect of the Conservation Reserve were asked to comment on this program after it was explained to them. Only 3 percent of these owners expressed any interest. Many felt that once a woodland was established it was too difficult to eliminate the tree cover.

Aside from a limited amount of ACP activity, the Cooperative Forest Management (CFM) service forester organization is the only public assistance program that has dealt directly with the management of the owners' existing second-growth stands. This CFM program was also the most popular, not only in terms of the number of interviewees who had sought assistance, but especially in terms of the potential clients (i.e., those who hadn't heard of, but showed some interest in the CFM program after it was explained to them). Ten percent of the owners interviewed had received or plan to apply for CFM assistance. If better means for publicizing the CFM program could be developed, an additional 27 percent of the woodland owners in the study area might be receptive. This is particularly challenging when one considers that these present and potential clients of the CFM program own 57 percent of the merchantable growing stock in southern Michigan.

Most of the owners who had sought the CFM forester's aid did so at a time when they were negotiating the sale of stumpage. The service forester cruised the owner's woodlot, marked his timber, and helped the owner advertise his sale. It was found that CFM foresters helped administer one out of eight of the timber sales conducted by the interviewees between 1954 and 1959.

Unlike the other assistance programs analyzed, it was possible to obtain some indication of the effectiveness of the CFM program by comparing the cutting practices of participants with those of nonparticipants. Almost 60 percent of the participants practiced good cutting while only 13 percent of the nonparticipants' cuttings were so classified. Since, on the average, the CFM participants had a better grasp of forest management than other owners, it might be argued that the service foresters' assistance was not the reason for the better cutting performances. However, it appeared more probable that an owner's association with a CFM forester not only improved his cutting practices but also enhanced his concept of forest management.

The frequency of participation in the CFM program varied among occupations. As with the forestry ACP, the number of CFM participants within a particular occupation stratum was not a very good indication of how this group might respond if more effective means could be devised to disseminate information regarding this program. For instance, the businessman-professional group had the highest proportion of owners who received CFM aid, but both the wage-earner and part-time farmer groups showed proportionally as much interest in this program as the businessman-professional group.

Taxation Has Little Influence on Woodland Management

It can be stated almost categorically that property taxes have little bearing on the way owners in southern Lower Michigan manage their woodlots. The reason is that most woodland owners are not able to determine how much their woodlots are being taxed.

Michigan has two types of forest yield taxes available to owners. There is some use of both of them in the study area but none of the respondents had used them. Only 5 percent of the owners even knew about the yield tax laws; most of these had not registered their woodland under either law because they felt that the tax on their woodland would simply be shifted to other real estate holdings.

Although nearly a third of the respondents had harvested timber products, only 3 percent had taken advantage of the capital gains provision of the Internal Revenue Code. An additional 9 percent had heard of, but never used this special provision — usually because they had not harvested timber products. The few owners who knew but had not applied the capital gains tax either believed they wouldn't derive any tax benefits or felt the red tape involved was not worth the savings they might gain.

After having the capital gains treatment explained to them, one-third of the owners interviewed expressed some interest, but 55 percent of the respondents expressed indifference.

Judging from the comments of those who had used it, the capital gains provision did not influence the way they managed their woodlot.

Forest credit had little appeal to the woodland owners interviewed in this study. Only 12 percent expressed any interest at all and only 1 percent showed strong interest. Most indicated that such funds if acquired would be used to promote farm or business ventures.

Most owners were not interested in forest credit because they were not in need of any type of credit. This lack of demand is only one factor that might preclude the future use of forest credit in southern Michigan. Because of the high cost of servicing, credit agencies might not be interested in negotiating loans secured by forest land.

A significant proportion of the woodland owners expressed an interest in the idea of timber price and market information service. Strong interest was shown by 12 percent, slight interest by 35 percent. Some interviewees (16 percent) said they had been advised on timber products markets and prices. However, only 8 percent of the owners who sought price and market information received professional counsel on this subject.

Woodland Owners Also Apathetic Toward Consultants and Cooperatives

Consulting foresters are apparently not very active in the study area. Only one interviewee had employed a consultant. Less than 1 percent of the interviewees expressed strong interest and only 7 percent slight interest in the services of a consulting forester.

Cooperative arrangements have been used in various parts of the Nation to cope with the inherent difficulties of small woodland ownership. However, such forestry organizations have never been formed in southern Michigan. Judging from the interest shown by the interviewees, it doesn't appear that forestry cooperatives would gain much support in this area. None of the owners showed strong interest and only 5 percent expressed slight interest.

DISCUSSION AND CONCLUSIONS

A number of vexing forest ownership problems were noted in the preceding analysis. With few exceptions these problems coincided with findings described by investigators studying private forest landownership in other areas. One factor was different: urbanization. An appropriate conclusion regarding the future of southern Michigan's forest resource is that urban expansion will continue indefinitely to usurp forest land in this area. The critical question left unanswered is how this phenomenon will affect southern Michigan's future timber production.

It would appear that further reductions in the forest area due to urbanization would be accompanied by a decrease in the supply of timber products. But such a conclusion ignores other factors. For one thing the estimated rate of urbanization of forest land (1 percent per year) may be too high. This prediction was based upon a 15-year trend between 1940 and 1955 which may be atypical. Secondly, in the short run the continuing reduction in grazing on woodlots and the conversion of cropland and pasture to woodland may compensate for the loss of forest area due to urban encroachment (fig. 8). During postwar years an estimated 25,000 acres of forest land was being urbanized annually. On the other hand, the annual reduction in grazed woodlots amounted to 38,000 acres between 1954 and 1959 (source: 1959 Census of Agriculture).

There is no way to determine the current rate of conversion of cropland and pasture to forest land; but Census data show that in 1959 the acreage of cropland "not harvested and not pastured" in the study area was 1,015,447 acres, an increase of 174,000 acres over the 1954 figure. Much of this acreage is undoubtedly reverting to forest cover.

Projections by the Soil Conservation Service give some indication of future land use changes in southern Michigan. According to their recently completed "Inventory of Soil and Water Conservation Needs," an estimated 168,000 acres of agricultural land in southern Michigan will revert to forest cover between 1958 and 1975. This is 32,000 acres less than their estimate of forest land that will be cleared for agricultural purposes during the same period.

Poor cutting practices are probably a more critical feature of forest management in southern Michigan than urbanization. In this study poor cutting was found to be more prevalent than good cutting during 1954 to 1959. If this situation should continue, a large gap may be created in the age-

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FIGURE 8. — As of 1959 there were over a million acres of cropland "not harvested and not pastured" in southern Michigan. Presumably much of it is reverting to forest cover.

class distribution of the stands. As a result many of the present forest-product marketing channels could degenerate for lack of enough timber to attract buyers. As was suggested earlier, the urbanization process alone could also encircle and isolate sections of the forest from timber markets. Ignoring the need now to market southern Michigan timber in a more orderly fashion may mean that investments in stand improvement and planting would be in vain because the end products would lack markets.

Unless many forest landowners can be motivated to adopt better forestry practices, timber output in the study area is unlikely to be increased. The challenge to public assistance programs is therefore real, but considering the vast number of small owners, the diversity of their occupational backgrounds, and their apathy toward forestry assistance programs, the task of influencing these owners assumes formidable proportions. The situation is not hopeless, however. For one thing, a relatively small percent of the owners possess a major share of the merchantable growing stock. For instance, 35 percent of the owners account for 90 percent of the dollar value of southern Michigan's growing stock. It is obvious that public assistance programs should be geared to reaching these high-value owners first, since it will be their decisions, and not the actions of owners possessing little or no merchantable growing stock, that collectively will temper the stability of southern Michigan's timber market structure in the immediate future.

Another important consideration is that many owners who had not been aware of particular assistance programs when interviewed and who expressed no interest when the programs were explained to them may simply have responded as they usually do to new ideas. With further exposure to the idea of using the various programs, their interest might be stimulated.

Better ways are needed to publicize the various assistance programs. This is apparent both from the ignorance of woodland owners about the programs available and the lack of response to programs when they do hear about them. For instance, it was found that about a fourth of the woodland owners owning one-third of the growing-stock value might ask for aid upon hearing about the CFM program. The fact that most of the woodland owners are *not* farmers points out the need for a way to reach more of the nonfarmer woodland owners with information concerning forestry.

Information and assistance regarding timber stand improvement, fire protection, and tree planting should not be overlooked when considering future needs, but help in the negotiation of timber sales should receive first priority. Not only was there more interest shown in the latter type of aid, but there is a greater need for it. One situation often encountered in this study was the owner who was almost totally ignorant of the value of his timber products when he negotiated a timber product sale.

Finally, two important observations need to be made:

1. This study has disclosed that few owners had implemented or intend to implement measures to increase the output of forest products. On the other hand, few owners either expressed the intention to clear their woodlots for agricultural production or had opportunities to sell their woodland for urban-type development. In many instances, therefore, forest land in southern Michigan represents a fixed asset.[8]
2. Allied to the first point is the observation that while the urbanization process will continue taking forest land out of production, all shifts in land use do not result in a loss in forest acreage. Changes taking place in the agricultural sector of southern Michigan's economy indicate a gain in forest acreage, and this trend may continue.

The long-term trend of timber production in southern Michigan cannot be predicted with certainty. The various factors described above exert conflicting influences. There is no reason to expect that production will decline drastically under present circumstances. If encouragement and assistance are furnished to owners of valuable timber, if other owners are influenced directly or indirectly to adopt more productive cutting and sales methods, and if marketing channels are kept open, total production would increase markedly. If no extra efforts are made to influence owners, or if efforts are unsuccessful, production may decline. The opportunities shown and the values involved suggest that increased efforts to raise production would be justified.

[8] *In economic terminology an asset is fixed when its marginal value productvity in its present use is less than its acquisition price but greater than its salvage value.*

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